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MAY A REALIST BE A PRAGMATIST?

IV. The Implications of Humanism and of the Pragmatic Criterion[1]

Ontological Pragmatism or Humanism.—From the days of Xenophanes we have been reminded by philosophers of the fact that each individual is compelled to view the world and to interpret it from the point of view of his own species. The world known by the lion and the gods that he would worship if he worshipped at all, differ from the world and the gods recognized by humanity. Bacon's description of the "idol of the tribe" is perhaps the most incisive formulation of this limitation from which we suffer. As human beings we are condemned to know not the world as it is in itself, but only those aspects of the world which may be glimpsed through the imperfect media of our human faculties. The other idols—the personal equation, and the undue influences of tradition, and public opinion—may, in large measure, be discounted or even removed. They are but slight handicaps to knowledge, as compared with the ineradicable racial limitation of outlook. Now, at first sight, the theory of humanism appears to be nothing but a very emphatic and extended disquisition on the idol of the tribe; but a further examination of the doctrine reveals a curious note of optimism which is usually quite absent from the treatments of this topic. We seem to detect the humanistic pragmatist in the act of bowing down to the idol and rejoicing in its presence instead of endeavoring, however, fruitlessly, to cast it out. The ordinary man of philosophic turn can never watch a dog nosing joyously in a heap of refuse without feelings of regret and shame that his human organs of sense preclude him from perceiving any but the unlovely aspects of that refuse. But the humanist seems positively to delight in the narrowness of human vision, and in the limited and anthropomorphic character of human knowledge. And when we seek the reason for this strangely optimistic attitude we find traces of a far stranger assumption, the assumption, namely,

[1] For the three preceding papers of this series, see this Journal, Vol. VI., pp. 460–463, 485–490, and 543–549.

that the world reflected in the mirror of human faculties is *the* world, the real world in which we live. Of course this assumption would not be strange at all in a naïve realist, or in one who regarded the human mind as a clear and adequate rather than a distorting and limited mirror of existence. What makes it strange in the case of the humanist is that in one breath he descants in the spirit of Bacon and the ancient sceptics on the power of the human mind to overlay reality with humanistic qualities, and in the next he praises the humanized objects thus created as constituting the real world. But because this doctrine is strange I would not imply that therefore it is self-contradictory, or even false. Perhaps it *is* possible to regard the world known by us as being in large measure determined by our human cognitive reactions and as being, at the same time, the real world in which we live.

Indeed, the relation of humanism to the doctrine of the idol of the tribe is rather strikingly analogous to the relation between the theories of Kant and of Hume. Hume demonstrated to his own satisfaction the subjective origin of that law of cause and effect on which all natural science was based. It seemed clear to him that a subjectively grounded science could not apply with any certainty to an objective world—hence his scepticism. But Kant accepting, with certain differences of detail, Hume's conclusion as to the subjectivity of causality and the other categories, took an optimistic attitude and declared that just because the laws of science were man-made they were for that very reason applicable to nature. The cure for the sceptical ills of subjectivism was more subjectivism. Not only causality, but also the *spatial and temporal order,* in which nature's facts are presented, is subjective. As the laws of nature and the laws of knowledge have, therefore, a common root in human reason, there must of necessity be perfect harmony between them. Out of the very ashes of Humian scepticism arose the phœnix of Kantian rationalism, with its new foundations for science, morals, and religion.

But to return. By humanism I understand the conjoined theories: (1) That what world we shall know is determined largely by our specifically human faculties, and that these cognitive faculties and functions are in turn determined by our emotions, desires, and needs. (2) That the world that we come to know in this way is the real world itself, and not in any sense a distorted image of it. Our question is: Are the implications of this most novel doctrine realistic or not? My answer is that they may be either, according as they are interpreted. The more natural, and actually the more frequent, interpretation is, I think, definitely subjectivistic. But I shall en-

deavor to show that there is a second and less obvious interpretation which is quite compatible with realism.

Now, first for the subjective interpretation: Human knowledge, whether consisting of explicitly formulated judgments, or of those more primitive and inchoate judgments called perceptions, sensations, and feelings, is always a reaction of the organism to its environment. Every reaction affects the thing reacted upon, and is in its own nature partly determined by that which reacts. The human being reacts in accordance with its needs and desires, hence the environment of human beings, in so far as it is a subject of the cognitive reaction, has been humanized. Through generation after generation men have reacted cognitively to nature and thus nature, or at least the nature that we know, has been moulded and adapted to human needs. This implies that nature is *plastic*. As a lump of clay conforms itself to the sculptor so nature conforms herself to our categories, which are nothing but typical forms of reaction. This does not mean that any one is free to think what he likes about nature. Any new thought about nature, any new cognitive reaction, has to overcome the momentum, as it were, of the entire mass of reactions contributed by the race during past time. But, despite this acquired structure, the world is and always will be plastic; to what extent it retains its plasticity, we can learn only by experiment. To the question as to whether the humanist believes that the nature that we know was ever wholly without form and void, and whether all her characters are acquired and none of them innate, I can find no clear answer. It seems to be a methodological maxim of humanism to try to trace back, so far as that is possible, any seemingly stubborn and innate character of the world to the ancient and deeplying reactions of the race. Even space and time may be regarded as very primitive human reactions which were so tremendously useful to man that they were preserved and handed down as integral parts of his cognitive apparatus, so that now he fails to recognize his own handiwork, and tends to regard them as the eternal and intrinsic properties of nature herself. This way of interpreting humanism assures to us, moreover, a harmony of the good and the true. For the cognitive reactions by which we confer upon nature her forms and characters are governed by our needs and desires, hence reality must be pretty much what the race has wished it to be. When we find bad parts of reality we must, I suppose, explain their badness as due to the fact that even a plastic nature can not be all things to all men, and our present desires are sometimes out of tune with those of our ancestors who got ahead of us in moulding nature.

There are two points in this type of humanism that are obscure to me. Would the humanist treat the specific facts of the world, such

as air and water, or such as stars and comets, in the same way as he treats its general forms of space, time, and number? Are they, too, to be regarded as human inventions, or may they be attributed to nature in her own right, as exceptions, so to speak, to her generally plastic character? And such things as death, pain, and failure—are they nature's own contributions to our world, or are they perhaps the harvest of some ancestral sowing of wild oats, the outgrowths of primitive needs which have been somehow preserved—presumably on account of their utility? A second point that humanism leaves obscure is its relation to bovinism, caninism, and equinism. Are they precluded or implied? Are the forms of the world in which we live the product only of our race or are they also the product of all races? And if the latter, then how are we to think of the relations between these different forms? Is there one nature which is the resultant of all the racial types of cognitive reactions, or are there as many natures as there are types of life? Does, for example, the dog's cognition of the world have any direct effect upon the cognitive forms with which we clothe the world, or are the different sets of categories neutral and transparent with respect to one another?

I have tried to formulate the subjectivistic interpretation of humanism in good faith, and to avoid caricature. The doctrine, as so interpreted, seems to me extremely picturesque and utterly false —I hesitate to call it absurd, only because it reminds one so strongly of Kantianism. The plastic reality of the subjective humanist and the Kantian thing-in-itself exhibit the same complacent submission to the infliction upon their own spaceless and timeless natures of space, time, and other forms of human cognition. How, in either case, it is possible, not to mention useful, to know reality as it is not, is difficult to understand. There is one important point, however, in favor of the Kantian over the humanistic view. Kant postulates a transcendental ego as the legislator for nature, while the humanist attributes creative cognition to the natural ego. As we know nothing about what a transcendental ego could do, it seems innocent enough, though somewhat gratuitous, to assume that it can create a world of time and space. But we do know something about our natural egoes, our concrete empirical selves, and to assume that they have in the course of evolution imposed upon nature the very categories which define that evolution—to assume that at a certain time and in a certain place psychophysical organisms did by means of their cognitive reactions create or invent the time and space in which those reactions occurred—to make such assumptions does seem to lead to a perfect seething stew of contradiction and confusion.

But let us turn to the more congenial task of formulating the second or non-subjective interpretation of humanism. We can ar-

rive at this second interpretation most easily by making two simple substitutions in the doctrine we have been criticizing. For the conception of objective nature as formless and plastic substitute the conception of *multiform variety.* And for the conception of cognition as creative or transformative substitute the conception of cognition as *selective.* We shall then get a theory not nearly so novel or picturesque as the other, but one that is sufficiently impressive and quite free from paradox. Let us begin with an illustration. Imagine a number of harps, the strings in each harp being of different lengths from those of the others. Imagine these harps to be set vibrating in response to a disturbance in the air. Compare the harps to living beings of different species, and the air that sets them to vibrating to the world that calls forth our cognitive responses. Now, if you think of the disturbance that causes the harps to vibrate characteristically as being itself toneless, lacking in vibrations of any specific length, then the illustration will apply to the first interpretation of humanism. But if you think of the air as containing all sorts of vibrations, from which each harp selects for sympathetic response the particular set corresponding to its own strings, then the illustration will apply to the second interpretation of humanism. Let us think of nature, not as poor and formless, with the plasticity of soft clay or of a painter's empty canvas, but rather as a being of infinite variety. Of the multitude of energies which are continuously impinging on sentient organisms, each organism can select for specific cognitive response only those few which its own set of organs are attuned to transmit; and from these our perceptual attention again selects those that are adapted to the needs of the moment; and from these again our reflective attention selects those which seem of most value for our rational, or permanent, interests; and, finally, from these last human society collectively selects from each individual mind the best, and with them constitutes human traditions, customs, and science. Not creation, but selection, is the essential feature in all these stages in the evolution of knowledge. The world that we know is a man-made world only if by *man-made* we mean *man-selected.* The selection is, moreover, profoundly and continuously modified by our needs, desires, and aspirations. There are other types of relation between objects than the space relation, and it is conceivable that there was a time when our ancestors had not found it either possible or expedient to cognize their world under the form of space. Space might in such a situation have been "invented," if by that we mean no more than "discovered."

There are two further points to which I would call attention before concluding the examination of humanism: First, the

denial of the plasticity of nature with respect to our cognitive responses does not in the least imply that it is not plastic and alterable with respect to our voluntary activity. Nature may be as dynamic, as changeable, even as indeterministic, as you please and yet perfectly unaffected by our mere acts of cognition. Soft clay is plastic and changeable enough, but it is not changed by our looking at it, by our mere appreciation of its presence, any more than if it was a piece of adamant or an eternal verity. If we want to change the clay we have got to handle it. And if we want to change our environment we have got to perform work upon it. The human race, like all other races, has made very considerable alterations in its physical environment, and these alterations have been guided by knowledge. But knowledge has never been directly effective but only indirectly, as a means by which the work of alteration could be effectively carried on. And the second point which I would make is to anticipate a certain criticism. It may be said that the distinction between the first and second types of humanism is a verbal and barren one, a typical intellectualistic distinction that makes no practical difference. I have chosen to ridicule the notion that cognition confers forms upon a plastic nature, and have praised the notion that cognition selects from the many preexisting aspects of nature those which it needs. The only difference, it may be said, between the two notions is that one formulation happens to excite unpleasant feelings in the present writer and the other pleasant feelings. Thus might run the criticism. The only way I could answer it properly would be to refer the reader again to the two formulations and leave him to judge whether the distinction between them is empty or real. But without going over the whole matter, let me call the attention of my hypothetical critic to the following: What I know of the nature of my ancestors depends upon the information that I receive about them. My conception of them changes and grows as my information changes and grows. Isn't this just plain sense? Now suppose I say that my dead and gone ancestors depend upon the information that I receive about them and that they change and grow as my information changes and grows. Isn't *this* just plain nonsense? And isn't the distinction between the sensible and the nonsensical statement a real and not merely a verbal distinction? Cognition is pointing. The sensations that nature gives us are the pointers or the indicators through which we know nature. The kind of pointers we get from nature will determine which of the qualities of nature we shall perceive. And these pointers, or sensations, will in their turn be selectively determined by the kind of sense-organs and brain which we have. The impressions that nature gives to the horse will point to or

reveal to him the equinistic characters of the world. The impressions that man receives will indicate or reveal the humanistic aspects of the world. The responses of the equine and the human nervous apparatus will respectively constitute the *ratio cognoscendi* of the world perceived by the horse and the world perceived by the man. To interpret this as meaning that the horse or the man is a creator of the forms and qualities which he perceives in nature is to confound *ratio cognoscendi* with *ratio essendi.* And just as when criticizing the psychological pragmatist we saw that he would in all probability never have been tempted to identify the truth relation with the experience by which it is verified if he had kept clear the distinction between the cause of knowing a thing to exist and the cause of the thing's existence, so here we may say that the subjective humanist, or the humanist who should pooh-pooh the distinction between the two interpretations of his doctrine, would be guilty of the stock fallacy of the idealists, whose main basis for identifying *esse* and *percipi* is their identification of *ratio essendi* and *ratio cognoscendi.* It sounds very fine and impressive to inveigh (in the abstract) against the "abstractness" and futility of distinguishing conation from cognition and the cognitive response from the object cognized. It is only when you take the trouble to think the thing *through,* to apply it to concrete cases, to test it pragmatically by the test of consequences, that you discover that to recognize the above distinctions leads to sense, and that to overlook them leads elsewhere.

The answer to our question, May a realist be a pragmatist of the ontological or humanistic brand? is a qualified affirmative. We defined humanism as the doctrine that (1) what world we shall know is determined largely by our specifically human faculties, and (2) the world that we come to know in this way is the real world and not a distorted image of it. We have tried to show that if we interpret humanism to mean that cognition is creative and that the reality cognized is plastic or amorphous with respect to cognition, then humanism is incompatible with realism and is false in its own right; while if we interpret it (as we have a right to do) as meaning that cognition is selective, and that reality has a rich variety of aspects from which we choose for recognition and elaboration those which best meet our human needs, then humanism as so interpreted implies realism, and is true in its own right.

Logical Pragmatism.—We come at last to that fourth form of the pragmatic doctrine to which all three of the leaders of pragmatism may perhaps be said to subscribe equally. The defender of instrumentalism, the defender of the conception of truth as the immediate experience of verification, and the defender of humanism, appear to

be united in the belief that pragmatism does at least offer a new and fruitful method of testing the truth of propositions. "The truth of a proposition depends upon the value of its consequences."

Let us begin by noting briefly the apparent ambiguities of this statement, ambiguities which have, I think, been convincingly and exhaustively analyzed by Professor Lovejoy in his article on *The Thirteen Pragmatisms* (see this JOURNAL, Vol. V., pp. 5–12; 29–39): Are the "consequences," whose value is to be the test of truth, consequences of the thing asserted in the proposition, or consequences of holding the proposition? I think it is the latter which is usually meant. Are the consequences that test a proposition to have value for society generally or only for the individuals who may hold the proposition? I suppose the pragmatist would answer: sometimes one, sometimes the other, preferably both. The more the benefits and the more the people benefited, the more likely the truth of the proposition. Are we to mean by "value" theoretical value for further knowledge, or practical value for conduct? and if the latter, then are the beliefs which satisfy our higher emotional nature and help us to live serenely and happily, to be adjudged as true, or only those beliefs which preserve our physical existence and make more efficient our reactions to our environment?

I fancy that the pragmatist receives such questions with a certain impatience. He might reply that he meant by value each and all of the things mentioned and that we had no business to try to pin him down to a choice. What satisfies our cognitive needs would, of necessity, sooner or later satisfy our practical needs. And just in so far as a belief meets a practical need, whether of the spiritual or of the material sort, just in so far has it the value that indicates truth. So be it, let us take the pragmatic principle in the broadest, loosest, and most generous sense and not plague the pragmatist by putting to him cases of propositions, the acceptance of which would satisfy practical needs but not theoretical needs, or esthetic needs but not material needs, or my needs but not your needs. In short we will refrain from the tempting and easy task of pressing him to acknowledge some criterion for evaluating all these very distinct types of value, and allow him to say that the more value of any kind and to anybody that the consequences of a proposition have, the more likely are they to indicate its truth. There is, however, one possible interpretation of the pragmatic criterion which we must definitely bar out. We are not to understand the statement to mean that the valuable consequences flowing from a proposition are the same as its truth, or a cause of its truth, but only that they are a reliable index or symptom of its

truth. We bar out this interpretation because we have treated it at length, and by itself, under the caption of "psychological pragmatism." We attempted there to show that the identification of a truth with the criterion or process by which it is tested, led to nothing but confusion. "Valuable consequences" is not to connote "truth" in our present discussion, but is to be treated as a new test or criterion for determining truth, into the validity and implications of which we are now to examine.

Our examination need not be long. We may admit at once that generally, and in the long run, most of the true propositions have consequences of practical value, and that most of the propositions having consequences of practical value are true. There is, in short, a considerable degree of correlation between propositions that are useful and those that are true. This correlation does not hold, however, between degree of utility and degree of certainty. The proposition that there are four flies on the table where I am writing possesses a very high degree of certainty for me and for any one else who has confidence in my veracity. Its utility, and the utility of its consequences, either practical or theoretical, social or individual, material or spiritual, is assuredly very small in amount. I will not say that it has absolutely no utility, for I am using it as an illustration, and then, too, it is conceivable that some stray entomologist might wander in here and find it valuable to accept the proposition. Or again, the proposition "15,554 is divisible by 7" is virtually, if not quite, certain; its degree of utility is so small as to be negligible. Either of these propositions has a far higher degree of certainty and an infinitely lower degree of utility than Newton's laws, or than the atomic theory. But notwithstanding the complete break-down of the pragmatic criterion if interpreted quantitatively, it retains a certain sporadic and occasional value. It is, however, so far from being the sole criterion of truth that we never dream of using it *practically and concretely* except as a last resort. In the case of the belief in immortality, for example, we may imagine a man who has come to the conclusion that all the logical evidence, for and against, comes to a perfect balance, but that the practical value in matters of conduct and sentiment, to himself and to others, of holding the belief is very considerable. Such a person might be justified in concluding that for these pragmatic reasons it was a little more likely to be true than false. Yet even here I imagine that most of us would regard it as more dignified and honest to come out with a frank expression of scepticism rather than to save oneself from that unsatisfactory state by clutching at the pragmatic straw.

But if the pragmatist really takes his criterion seriously and regards it as having anything more than a meager measure of ab-

stract intellectualistic validity, why does he not test it pragmatically? Why does he not point us to concrete cases in which it is practically valuable to test the truth of a proposition by its practical value? When we consider the extent to which pragmatists fulminate against the abstract and the purely theoretical and eulogize the practical, the concrete, and the empirical, it is a matter for real wonderment that their own writings in defense of the concrete are themselves so abstract. If an empirically-minded person believed that he had discovered an important criterion for testing the truth of propositions, wouldn't you suppose that the very first and most natural thing for him to do would be to draw up, in good Baconian fashion, a statistical table of all the typically different cases of propositions having useful consequences and observe: (1) What proportion of them were true. (2) What proportion of those that were true had been found to be true by a study of the utility of their consequences. I hazard the guess that any such statistical tabulation would show: (1) That (*a*) the great majority of useful propositions are true, but that (*b*) there is still a goodly number of beliefs, such, for example, as the overestimation of your friends' virtues and the underestimation of your own, which are very useful and not at all true. (2) That of the useful propositions which are true (*a*) the great majority could only be verified by other evidence than that of the utility of their consequences, though (*b*) a considerable number could be verified both pragmatically and otherwise, while (*c*) a very select few could be tested only by the pragmatic criterion. I am not concerned to defend the correctness of this hypothetical table. I wish only to call attention to the really extraordinary fact that no one of the pragmatists has cared enough about his own theory of the correlation of utility and truth, to make any kind of decent, serious, inductive test either of its value or of its validity.

But as to the implications for or against realism of this fourth type of pragmatism—I do not see that there are any at all. The pragmatic criterion might be true or false and realism might be true or false—all quite independently.

And now finally to conclude: The terms of our question, May a realist be a pragmatist? have been defined, and the question itself has been answered under four headings corresponding to the four theories that the term pragmatism appeared to cover. We found that (1) a realist might be a pragmatist of the biological or instrumentalist type, and that an instrumentalist, to make his theory consistent, would have to adopt a realistic standpoint. (2) Psychological pragmatism, or the theory that truth is identical with verification, was definitely subjectivistic and, hence, incompatible with realism. (3) Ontological pragmatism or humanism was susceptible of two in-

terpretations, one of which is idealistic, the other realistic. (4) Logical pragmatism, or the pragmatic criterion for testing the truth of propositions by their utility, was an ambiguous theory, of dubious value, lacking empirical verification, and without any apparent bearing upon the question of realism.

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THE SOURCES OF LOGIC

THE impression that any *naïf* person gets who plants himself innocently in the flux of things is that things are off their balance. Whatever equilibriums our finite experiences attain to are but provisional.'"[1] Nevertheless the flux has certain features of regularity; its habits can be learned and its code of signals understood if observation and memory are practised without superstition. The empirical world can not be made to stand still, but the unremitting operation of causality, which is one of its primary characteristics, can not be overlooked by any one bent on living there.

Under the conditions provided by nature something has been developed, presumably without miracle, that we are accustomed to call intelligence, and although the history of intelligence has melancholy chapters, progress in intelligence can not be denied. The invention of the bow and arrow, the discovery of the use of fire, the idea of a fish-hook were progress in intelligence, and I feel justified in claiming that, in an environment where causality is perpetually in operation, intelligence is the most important thing for a creature to possess, and that the creature who has got intelligence is the one that can read what I called above nature's code of signals, or so much of it as it is important for the creature to understand. An Eskimo does not need to read all the signs that an Indian of the plains must read, and neither of these is concerned with all that a navigator or an architect must know, but all of them must be able to recognize in certain instances of immediacy the conditions for the generation of determinate consequences. As a tentative definition of intelligence I suggest, accordingly, this: the capacity to read the signs of determinate consequences presented by the immediacy of an environment.[2] And man does not learn to read the signs of

[1] William James, "A Pluralistic Universe," p. 88.

[2] The present article continues the theme of two previous ones, "The Existential Universe of Discourse" (this JOURNAL, Vol. VI., p. 175) and "Knowledge and Perception" (this JOURNAL, p. 393), to which I must refer for a discussion of points here taken for granted.

nature, primarily, at least, for the glory of God or to pass the time. The environment is extraordinarily complex and full of ambiguities. A creature can not survive long among causalities that have no sign, or the signs of which it does not understand. Whether a man be a savage or a statesman, he faces an environment whose energies he may not ignore. Intelligence is, to be sure, the capacity to read the signs of nature, but they can not always be read promptly and with accurate decision. Yet one thing is always certain to intelligence, and that is that the situation is determinate, although the factors which compose it may not be yet made out. And if intelligence can operate at all among signs that are ambiguous, it operates upon specific ambiguites that present concrete alternatives but never upon situations so indeterminate that all that can be said of them is that everything is either A or not A.

A hunter, let us suppose, needs game, and he may search for it in different directions. He must choose one of the various possible routes, and he will base his choice upon his acquaintance with the facts in the case. He can hunt, let us say, toward the west or toward the south. He can not go north or east because determinate conditions, such as rivers or mountains or the direction of the wind, make it profitless to do so. The specific situation presents the alternatives, south and west, but it presents them as alternative answers to the question "Which?" Here is a situation of excluded middle that is a genuine problem, not an abstract or a verbal one. The problem character appears in the urgency of the question "Which?", and it does not appear until the question "Which?" is urged.[3] If I say, "You can pay in either gold or bank-notes, it makes no difference," there is no problem for me on that point, and if it makes no difference to you there is no problem presented in the alternatives. But what we may call the excluded middle of experience comes into play when intelligence faces the question. "Which is it?" That is for intelligence to have the burden of a problem.

The question, "West or south?" can be put in two ways: Which is the worst way? and which is the best way? The hunter, of course, is after game; he has a positive attitude toward the disjunction, G (= best chance of getting game) is W or S, but which? Reflection must decide in favor of one or against the other, and if the route toward the south presents difficulties the judgment may be G is not S, meaning that if the route to the south is taken, the hunter incurs the consequences of his choice, and those consequences are rejected

[3] It might be objected that the illustration used is an arbitrary simplification through the use of only two alternatives. There might be more. This, however, does not affect the logic of the case, for, whatever the number of alternatives, the question "Which?" is addressed to a determinate situation.

because they contradict his purpose. If, however, the advantages of going westward first attract attention, G is judged forthwith to be W, with the consequent disappearance of S. The judgment G is W means that if the hunter travels toward the west he faces the consequences of his choice, and these consequences are to be accepted and pursued. In the concrete problematic situation, $S =$ not W and $W =$ not S because nature is determinate, and the question "Which?" is answered not by guessing, but by intelligently considering the facts of the case. The natural meaning of A is A is that if you adopt A you take the consequences; if Socrates is a man Socrates must accept the consequences of humanity. And in our supposed case G is not S is an assertion of incompatability. The hunter says: "My route toward the quarter where game may be most readily obtained is not a route toward a quarter that presents greater difficulties;" A is not not A. The principle of contradiction as a principle of incompatability thus finds its natural application in the rejection of methods that are seen to lead to unaccepted consequences. Warning, admonition, the pointing out and shunning of unfortunate consequences, is an emphasis on incompatability. The principle of contradiction appears in any prohibition which is not merely imperative but carries with it the explanation that if you do you can not evade determinate consequences which will be a contradiction of your purpose. The decision G is W, a positive expression without intended negative implications, expresses rather the interest in consequences which are seen to fulfill the purpose for the sake of which the question "Which?" was asked. This distinction between the functional appropriateness of the principle of identity and the principle of contradiction may seem forced and artificial, but we must not confuse the attitude with its verbal expression. The attitude of acceptance can be expressed in terms apparently negative, and the attitude of rejection in terms superficially positive. But whenever intelligence operates a purpose is maintained in execution to a certain terminus, but intelligence operating upon a problem is thought; and a problem is a situation of either, or, but which? And if the judgment A is B or A is not C is to signify *thought,* and not memory or revery or guessing, it must supervene upon what I have called the excluded middle of experience, and that disjunction may be terminated either by the discovery of the signs that mean satisfactory things, or of the signs that mean unsatisfactory things; the signs that identify themselves with the purpose at stake, or the signs that contradict that purpose. Any creature capable of hesitation, flight, and pursuit ought to illustrate the three so-called laws of thought, for hesitation, avoidance, and acceptance must be primary attitudes

of living beings in environments where causality is complex and continuous.

The fact that nature does show the type of regularity that enables us to infer one thing from another, that to him who has used his senses the immediacy of things does announce what may be expected of them, is what makes it possible for intelligence to develop in such a world as this one. And the resources of intelligence are observation and memory. The virtues of things do not need to be discovered more than once; a creature who could not observe, or having observed could not remember the meanings of immediacy, would be as in a world where causality had no signs; he would not be there long. To accomplish progress in intelligence is to become more and more at home in the flux, to note and take account of those sequences of consequence upon conditions that observation shows can be depended upon. Every such sequence is a universal character of nature, and nature is characterized by an infinity of what we may call universal judgments. Anybody who goes ahead confidently to do anything by a method which experience has shown to be right illustrates unconsciously this feature of the world. In such a world it is then quite inevitable that the technique of adaptation, of living and prospering in the flux, should give us the universal judgment, which just because it is a rule is not an existential judgment. People in various parts of the south like to keep away from places where rattlesnakes are numerous. There may not be any snakes there or anywhere else, but if one should get bitten by a rattlesnake the consequences would certainly be very disagreeable. An engineer or a superintendent of construction often carries in his pocket a little book full of universal judgments. There is no mystery whatever in the fact that these technical rules are not existential judgments. Both the southern pedestrian and the engineer are interested in propositions that are really true and really timeless, and guaranteed by empirical nature. To know what to do on a given occasion is to bring a universal judgment to bear upon an existential judgment. The pedestrian when he hears the sound of a rattlesnake should stand perfectly still. Thus we might call the existential judgment, the judgment of perception and the universal judgment, the judgment of intelligence. And the latter is applicable to the former just because immediacy is a sign of determinate consequences.

Thus things show what we may call substantive and transitive aspects, and if language is to be an instrument of intelligence its grammar must be adapted to the typical complexities of its object. Unless we assume language to have had a miraculous origin, it is impossible, it seems to me, to avoid the conclusion that grammatical

relations must reproduce in some way the most significant relations in the world where the user of language must seek to prosper. Now whatever the verbal symbols may be, an attitude is expressed in a sentence, the qualification of a substantive by a verb, and although I have no particular evidence upon which to argue the point, it does seem to me well worth some inquiry to ascertain whether or not the realtion of substantive to verb may not reproduce a relation analogous to that between what I have called immediacy and causality. There can be no doubt that philosophy has hitherto sought to describe the world too exclusively in terms of the substantive aspect. It is at least permissible to urge the importance of the verb.

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DISCUSSION

PRAGMATISM AND REALISM

PROFESSOR MONTAGUE'S interesting and characteristically lucid series of papers on this topic is, I hope, to be continued. In those which have thus far appeared certain considerations pertinent to the subdivisions of the topic already dealt with have, as it seems to me, been overlooked. These considerations I think it worth while to point out, in the hope that Professor Montague may take occasion to revert to them in some subsequent instalment of the series. The determination of the historic affinities and logical implications of a doctrine so influential, and so characteristic of our time, as pragmatism, has, at the least of it, great historical interest to those who desire to understand, logically and psychologically, the complex and curious interplay of intellectual motives from which the ruling tendencies of the time result. There is, to be sure, in a sense, no such thing as pragmatism; that doctrine is not a well-defined substantive entity, a logical brick that can be passed from hand to hand, microscopically analyzed, and broken into pieces, all without essential alteration or loss of identity. Few of the historic schemes of doctrine for which we happen to have names are things of that sort; and for that reason, most of the innumerable controversies of the past over the question whether one -ism or -ity is compatible with another, have been unedifying examples of circular reasoning. Whether, for example, Christianity is compatible with pantheism—a subject that has been much debated—depends, obviously, entirely upon your definition of Christianity; but the term "Christianity" as the name of a collection of historic phenomena—the opinions or tendencies of persons called Christians—has at all times embraced a great number and diversity of elements. It is

possible to take any one of these that you please, declare it to be "essential" or "fundamental," and then proceed to prove anything you please upon the question at issue. But there is no objective reason for considering one more essential as a characteristic of the historic complex termed Christianity than any other, unless it can be historically shown to be either (*a*) the sole, or (*b*) the most emphasized, teaching of the actual originator of the movement, or, at least, (*c*) a teaching never previously expressed or emphasized, a novel contribution to the world's stock of ideas. So, too, pragmatism is a historic complex of mixed philosophical motives and tendencies. There is danger, on the one hand, that in discussing its affinities with other doctrines one pick out arbitrarily some one element of the complex, or a few elements, and by analyzing the implications of these prove the pragmatist to be a realist, or a solipsist, or a positivist, or an anarchist, or an ontological Mormon, or what you will. On the other hand, it would be equally an error to assume at the outset that there is no one pragmatism *par excellence,* no trait of the group of doctrines going under the name and usually combined in the same minds, which is so peculiar and exceptional historically as to deserve better than any other to be regarded as distinctive and essential. Only, it remains to find, in the specific instance, the criterion of such essentiality and to discover the feature of the doctrine in which it is realized. To these ends it is requisite, first, to make a complete enumeration of all the more important ideas or logical motives emphasized in the actual utterances of persons willing to call themselves pragmatists; second, to see whether any one of these motives separately, *or the fact of their combination,* is, historically speaking, a relatively novel and distinctive contribution of this particular movement to our collection of more or less coherent and intelligible types of doctrine upon philosophical issues. Unless these precautions are taken, discussion upon the affinity of pragmatism for some other -ism will not really deal with any "objective" or historical thing called pragmatism, but only with the compatibility *inter se* of certain propositions arbitrarily drawn up by the person who starts the discussion.[1]

Now, Professor Montague's argument may, I think, be objected to on the grounds (1) that it hardly sufficiently recognizes one de-

[1] Pragmatism as a term bandied about in philosophical discussion ought *not* to mean merely the total complex of doctrines that chance to be joined together in the minds of persons—or in the mind of the first person—denominated pragmatists. If we are to use this type of term, and are to avoid muddle, we must, I should insist, on the one hand give it some historical reference to some real stream of tendency; yet we should, on the other hand, subject that tendency to both logical analysis and historical comparison, in order to pick out what is original and distinctive in it, *if, indeed, there be* any such distinctive factor.

cidely important and much-emphasized motive in the teaching of the pragmatists; (2) that it overlooks the fact that there is something novel and unique in pragmatism and that this unique characteristic consists chiefly in the *transformation* of the instrumentalism, of which he speaks in his second article, through its conjunction with the neglected factor—so that the instrumentalism of the pragmatist is not mere instrumentalism, but an instrumentalism of a special coloring.

1. One of the things that the pragmatism of James is, certainly, is a modern expression of the motive which, in certain other expressions, is known as nominalism or positivism. In his original volume of lectures on the subject, James showed very plainly that he was in the line of the great nominalistic tradition of English thought, a successor of William Ockham, of Hobbes, of Locke and Hume and Berkeley. The problems of philosophy, even the aspirations of religion, were to be simplified, by confining thought to its proper objects of reference, by explaining to the mind the real limits of the meaning of every proposition it could frame. And the secret of this simplification was to lie in reducing all meaning and all verifiable truth to a "pointing" to "particulars in concrete experience." Enumerate those particulars and you have the whole meaning of any proposition; discover the smoothness and satisfactoriness of the transition from the particular concrete experience constituting the judging moment to the subsequent concrete experience to which it pointed, and you have verified truth. The doctrine was, indeed, in a sense the last and completing word of the whole secular movement of nominalistic empiricism; where the medieval nominalists had applied the demand for the reduction of the meaning of abstractions to concrete and empirically verifiable particulars, chiefly to the miscellaneous hypostases of Platonic realism; where Hume had applied the same demand to the notion of cause, and Berkeley to that of material substance; James applied it, in a still more fundamental manner, to the notion of truth itself. The truth was to be reduced to truths; and each truth must be statable in its "cash value." "Truth" was to be the name, not of a mysterious essence, nor of an abstract quality, nor of a bare relation; it was precisely a kind of experience, having in each case a time and place and individual *quale* in the flux of experience. The typical nominalistic motive—the simplifying, clarifying, *denkökonomisch* motive; the typical nominalistic method—the definition of universals as collective names for particular items in experience; the typical nominalistic result—the rejection as negligible, if not demonstrably unreal, of all entities incapable of being brought within the compass of concrete experience—these are all conspicuously present in the most authoritative exposition of the

pragmatic doctrine. Professor Montague seems to me to have scarcely noted sufficiently the rôle of this familiar and ancient motive in the new movement.

Now, nominalistic empiricism in epistemology has always made for idealism in metaphysics. Idealism, though it is a good deal more, is primarily the application of the law of parsimony to ontology. It refuses to multiply entities beyond necessity; and it finds no necessity for adding anything to their immediate, empirical face-value. That a tendency of thought in which the nominalistic temper is so marked should be thought naturally to incline to realism is surprising; that any part of it should be held necessarily to imply realism indicates a paradox on the part either of the holder of the doctrine, or of the critic who finds such an implication latent in it.

2. It is true, however, that pragmatism also means instrumentalism. But its instrumentalism, it seems to me clear, should be construed in the light of its nominalism, of its demand for the reduction of all meanings to concrete particulars of experience stated in their most "economical" terms. Professor Montague has taken pragmatism too atomistically. What has been called pragmatism is, as I have maintained, a medley of diverse logical motives. Some of these I believe to be actually incompatible with one another. Most of them have on occasion been put forward separately and disconnectedly by pragmatist writers. Yet it can not be denied that several of them are capable of being harmonized. And when we are interpreting pragmatism we ought to take as many of its elements together as logic permits, and let the elements thus synthetized modify and interpret each other. We may thus be able to see in at least some phases of pragmatism a more or less novel doctrine, even though its constituent parts be not novel. It would be a new compound in intellectual chemistry.

Instrumentalism certainly—as "the courageous application of Darwinism to the life of reason"—is, in its most general definition, by no means a novel doctrine. The substance of it is to be found in the evolutionary empiricism of Spencer: thought is an incident of organic adjustment to environment, and its categories are the result of successful and biologically advantageous adjustments. In Spencer this doctrine appears in a realistic form and with an intellectualistic temper, very much after the fashion sketched out by Professor Montague on pages 486–7, 489–90; such a form and temper are thus not uncongenial to instrumentalism, in the extremely broad sense there given it. But pragmatism is not simply a re-editing of the evolutionary empiricism of Spencer and Fiske and of a host of Darwinizing epistemologists. Its distinctiveness consists precisely in the fact that it combines instrumentalism and the method of nominalism.

It does not take the doctrine that knowledge is an instrument as meaning that it is a copying or duplicating instrument, designed to receive an impress or decalc of an "environment" there independently. Pragmatism appears to propose a simpler, more economical, more rigorously empirical, and concretely verifiable, way of construing the instrumental relation.

It remains, indeed, to ask whether these two motives, instrumentalism and nominalism, are truly harmonious. Professor Montague thinks not (pp. 486–7). But in this I think one must say that he merely exhibits that double vision characteristic of the realist by temperament and connatural predestination—without really presenting to those of a more nominalistic turn of mind convincing reasons for thus beholding the entire universe as twins. Certainly he begs a good deal of the question, marching to his realistic conclusions very calmly without casting a glance by the way at the most characteristic arguments and cherished distinctions of the pragmatist. For the pragmatist—whether he eventually profess realism or not—quite explicitly defines his more *denkökonomisch* way of interpreting the instrumental function of knowledge. He recognizes, indeed, that a serviceable instrument must somehow fit into something other than itself; instrumentalism always implies *some* sort of correspondence. But this correspondence, the pragmatist points out—if I have ever at all understood him—need not be a correspondence of something in conscious experience with something independent of conscious experience; it need only consist of a system of cross-references within the unbroken context of experience itself, between temporally sundered moments of the flux of existence. If one thing more than another is the *bête noire* of nearly all of those called pragmatists, I had always supposed it to be the copy-theory of the judgment. It is, in fact, as much on instrumentalist as on nominalist grounds, as I understand it, that the pragmatist has objected to that theory. It does not serve any useful purpose whatever for an idea to match either a simultaneously-existent, or an eternal, object; what is pragmatically important is that this moment's thought should forecast, or advantageously lead into, some future moment's experience. In short, pragmatism substitutes inter-temporal for trans-subjective reference, in its interpretation of the criteria alike of "serviceableness" and of "objective validity." This does not seem to me an altogether true or adequate view; but it seems to me a definite and intelligible one; and in so far as instrumentalism is a part of the group of doctrines that have been designated at various times as pragmatism, it seems to me to be this particular, this nominalistic, variety that is so far novel, distinctive, and important as to deserve to have the designation applied to it. This

kind of instrumentalism I personally believe to be idealistic in its logical tendency; but, since the defense of that view would require further argument, I will in the present discussion not go so far; I will say only that it does not either necessarily or naturally make for realism. It leads *either* to idealism or to a *tertium quid,* a view in which the traditional subject-object dualism, which constitutes the starting-point of the ordinary controversy between realist and idealist, is abrogated and transcended. Into an examination of the relational theory of consciousness I do not want here to enter. I am content, therefore, to leave it as a pragmatic alternative to idealism, maintaining only that, at any rate, if it is in any degree a new or distinctive theory, it must be distinct from dualistic realism of the ordinary sort; while if it is not distinct therefrom, it is incompatible with, the nominalistic instrumentalism of the pragmatist. In any case, Professor Montague's realism (*e. g.,* p. 487) seems as frankly dualistic as any ever was, and as fully committed to the copy or duplication theory of knowledge. This, I should agree, is the one perfectly intelligible and clearly definable realism, the only one rightly to be so called. And it is such realism that I understand to be here in question. In view, then, of what has been said above of the characteristic *nuance* of pragmatic instrumentalism, and in view of Professor Montague's failure even to essay to show that that *nuance* results from an inconceivable combination of ideas, I can not see that he has proved that "an instrumentalist *must* be a realist." I even apprehend that it would be difficult for any one to prove (though I know the task has been attempted) that the pragmatist *may* be a realist. He ought to be either an idealist, or what for the present I can only call an anti-dualistic x.

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REVIEWS AND ABSTRACTS OF LITERATURE

Social Education. COLIN A. SCOTT. Boston: Ginn & Co. 1908. Pp. xi + 298.

No essay in education since Dewey's "The School and Society" has won recognition so immediate and so marked as this volume of Dr. Scott's, and none, I think, has so well deserved it. The book enjoyed, to be sure, certain advantages at the outset. Nowadays the adjective "social" is in most fields a shibboleth; and in the field of education Dr. Scott voices a definite movement, which has already produced a quarterly, a congress, and a club—a movement, he declares, "destined to stimulate the deepest, the most progressive, and the most characteristic elements in American education." To be thus timely and thus heralded, however, is happily

but a pleasant circumstance in the production of a work notable for breadth of outlook, for discriminating analysis, and for practical helpfulness. School teachers need not be sociologists to find in "Social Education" suggestions which they can use at once in their class-rooms; yet they can not escape from Dr. Scott's persuasive pages with a mere collection of devices, to be used without reference to a central conception, but will get, rather, what they most need—a new point of view from which to attack their daily work. School officers will find in the book a philosophy to preach and reforms to practise; indeed its lessons are in a sense less for teachers than for superintendents, who are often the blinder slaves of experience. Students of education, finally, are indebted to Dr. Scott for an illuminating restatement of educational aims and for a treatment of the school, its limitations, relationships, and methods, which is, of its kind, at once novel and final. In short, no one who thinks about education at all, even if he has never heard of the social movement, can afford to miss the book.

It must not be supposed, however, that Dr. Scott has written an exhaustive treatise. "The aim of this book," says the preface, "is to put at the disposal of its readers a point of view rather than a completed system of thought." Accordingly, of twelve chapters two present the social point of view in education, three compare it with analogous but practically divergent points of view, and the rest illustrate its effects in various phases of school procedure. There is no attempt to raise and solve educational problems in which social values are not directly at stake, and the book remains, therefore, a constructive and inspiring essay rather than a manual of pedagogy.

For this limitation of his undertaking surely no one who reads the book will blame the author. Dr. Scott has taken the social point of view seriously and concretely. He does not theorize vaguely and blandly, covering every sort of work in the schools with a convenient blanket-conception; nor does he idly condemn. His theory is thought through, and is inseparable from definite and somewhat radical proposals for practise. Yet it is not a theory which sanctions over-rigidity of school management, or under which an author might properly lay down many rules. The point of view is itself the vital thing, as indeed it must be in a science so thoroughly ethical—so human—as education. "The experiences described in this book," Dr. Scott expressly states, "are therefore nothing more than cases. . . . The point of view or method of thinking is the essential factor which makes for liberty, social cohesion, and thoroughness. These same educational requirements can be realized in entirely different forms."

What, then, are the requirements of the social point of view in education? Almost the only stiff and forbidding sentence in the book sets these requirements forth most compactly: "The state and the school can avoid the evils that threaten them only by a more comprehensive and deeper social synthesis organically united with a freer and more thoroughgoing individual development." The republic, that is, needs men and women of larger initiative, better trained to cooperate for the common good. But the school can not develop initiative when its policy is a policy of repres-

sion, nor can it train cooperation when it carries on its work wholly, or chiefly, by the method of competition. So much others have said before, notably Professor Dewey: as Dr. Scott quotes—"Upon the ethical side the tragic weakness of the present school is that it endeavors to prepare future members of the social order in a medium in which the conditions of the social spirit are eminently wanting."

The conditions of the social spirit should be present, then, in all the work which the school undertakes: a class is a community, not a collection; studies are not like medicines, for individual consumption, but for social use. What this means in the class-room Dr. Scott shows in his chapters on various branches of school work; and if he presents an ideal somewhat beyond the inexperienced teacher, he proves, nevertheless, that social method, well-handled, means for the pupil a firmer grasp of the subject, a fuller exercise of his individual powers, and better than all, a training in cooperative thought and action. But even this is not enough. The mission of Dr. Scott's book is to demand recognition for an aspect of the school which every dictated course of study inevitably ignores. "The school," he says, "is something more than a mere extension of the state or the home. It is a social combination, with social feelings, sentiments, and needs of its own. By constituting it at all, society has constituted it a social organism, certain to produce definite social changes in the brains of its members." In other words, we must recognize that children in school, like their elders in the world, are bound to be living a social life. They organize themselves into a community before our very eyes; they have their cliques, their leaders, their purposes, combats, treaties. It is in this life of their own organizing, not in the work they do at their desks, that they get their best training in cooperation and win their largest measure of individual development. This is the life we should lay hold of, foster, guide, develop.

The greatest defect of the school is thus the lack of properly guarded freedom for the play of the social forces that actually exist among the children. To establish in the regular work of the school the conditions of the social spirit is good, but we must also utilize the spontaneous social life of the pupils. They should be permitted to form plans of their own and to carry them out in groups of their own choosing. "If liberty and obedience, characteristic of smaller groups . . . of a vital and focalized social character, are a possible combination for the young, there is no reason why . . . [self-organized group work] . . . should be left out of the school . . . [even if the school] . . . primarily represents the state. Social groups of adults in society at large are always in contact with the state, but in such a way as not to prevent their real freedom. In the school the teacher represents the state as well as society at large. If children's groups are left . . . to be formed on the street or the playground, they are left without proper protection and hindered in their normal growth. As a consequence they tend to relapse into organizations for mere play. And even play is not sufficiently protected. It is cut short on every side. Fifteen minutes here and half an hour there is not continuous enough for the carrying out of the best plans of which even play groups are

capable. Lack of facilities, especially in cities, hampers their best development. The haphazard contact with the state through the policeman, or other members of adult society, tends to make such activities as may be undertaken haphazard themselves and deficient in true social significance. That contact with the state, which the state has itself devised as being suitable for children, namely, the contact with an intelligent, learned, socially-minded, and sympathetic teacher, would appear to be the only condition in which such groups could find the aid and protection which they need. It is only under this condition that we may expect them to go further than play and undertake real and serious work."

This is Dr. Scott's special doctrine of self-organized group work. On "a background of the dictated course of study" he would provide time for this work as nearly as possible up to the limit of the pupil's capacity for it. The "essentials" would be only the better taught and learned, for the group work would be a laboratory for their use and a test of the pupils' grasp of them; but the ethical value of the self-organized work itself is of course the main reason for urging it. And one can hardly doubt its value. "Newspaper educators," "old-line schoolmasters," college professors who casually condemn all educational theory—these will arise to scoff at Dr. Scott's proposal; but there will be others in plenty to range themselves on his side, and in the end social education will become a fact. The present reviewer has but one doubt to express, and that is a doubt as to method rather than as to principle. Children come to the school with a stock of native instincts, impulses, and powers, which the school must use. Society demands, on the other hand, that they shall acquire certain habits and know certain facts. In a sense, therefore, school teaching is the attempt to turn the native activities of children into the channels preferred by adults. Now Dr. Scott, in common with others, proposes that the habits and the ideas desired by society be so organized that the children can learn them by the exercise of their native powers *socially*—that is, in active cooperation; but, besides that, he proposes also that they be given extra time in which to use their powers for purposes of their own, on plans of their own making. This is necessary for the reason that children get little development of intention, initiative, or purpose, in the regular school work, even when it is organized socially. They can not appreciate the adult point of view which demands that they shall sit up straight and learn the multiplication table; they are not really exercising their power to conceive and carry out a purpose when they join to make some object for which the course in manual work provides. *Until they can enter into the purposes of society in establishing a course of study,* school work must therefore remain essentially compulsory, and some other field (like group work) must be found in which to train free initiative and free cooperation. *But gradually children do enter into the purposes of society in establishing the school,* and if they are trained in purpose by the method of social education, they will, no doubt, do so sooner and more strongly. There comes a time when the boy takes charge of his own life, views its opportunities and necessities, and can be led to form an ideal to which thereafter he shall subordinate transitory

desires. Then, as it seems to me, self-organized work is no longer necessary. To this point it should itself have led. Laboratory investigation in groups is highly desirable, and the subjects of such investigation may well be chosen by the pupil, subject to the integrity of the course of study; but the time for doing anything he may propose has gone by, for now he should be led to subordinate his casual purposes to a central purpose and to submit to a course of study which he has himself chosen as best suited to make him the sort of man he wants to be. This change in the nature of desirable group work Dr. Scott does not make clear, if indeed he recognizes it.

Happily (oh, most happily for those who read much pedagogy!) Dr. Scott's style is engaging, fluent, rich. For the sake of books much hoped for from his pen, the present reviewer suggests, with apologies, one slight change—a clearer and more explicit statement of the main theses, both in the text and in the table of contents.

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La naissance de l'intelligence. GEORGES BOHN. Paris: Ernest Flammarion. 1909. Pp. 350.

An impetus to the advancement of scientific method in animal psychology is presented in this work. By means of objective study, it endeavors to substitute for vague words and anthropomorphic interpretations, analytic description of animal activities.

After an historical survey of the subject, in which the opposed tendencies of anthropomorphism and pure automatism are contrasted, the present status of existing problems is outlined. The author finds the most fruitful method for the analysis of psychic phenomena to be the "ethological," "the study of the relations of living beings among themselves and with the diverse modalities of the exterior environment." In the discussion of the different problems considered the author has gathered together the various isolated contributions to the subject and thereby rendered an important service to modern comparative psychology.

A review of the various criteria advanced for the determination of "psychism" in animal activities shows them to be generally unsatisfactory. The morphological tests do not agree and the functional determinations likewise prove inadequate. To say there is psychic activity when an animal learns, chooses, etc., tends to a discussion of words rather than to the discovery of facts. By giving a purely objective definition of "psychism"—viz., the association of sensations—the question as to the possibility of a comparative psychology is removed. Mere variability of reactions does not suffice as a criterion of psychism. It is the analysis of the variability of reactions, the discovery if the origin of these is organic, peripheral, or central, which furnishes the means for the objective determination of psychism. It must be remarked that in this problem of psychism there is no question as to the subject of consciousness, but rather a purely biological interpretation of the mechanism of reactions.

And now the way is prepared for the discussion of facts. Book III., which contains perhaps the most important contribution of the work, passes to the consideration of the "Dynamics of Psychic Phenomena." The author combats the anthropomorphic interpretations of the activities of the inferior animals, and seeks to discover the laws which regulate these phenomena. Observation and experiment lead to the conclusion that certain biological notions are generally adequate for the explanation of the movements of the inferior animals (infusoria, polypes, worms), and there is no requirement for a psychological interpretation, such as will, choice, etc. The notion of tropism is of fundamental importance in the mechanism of reactions. By tropism is understood those irresistible movements of the animal made in response to forces of the exterior environment. Many misunderstandings of this notion are due to the failure to recognize the influence of the law of symmetry in excitations, which causes the oscillatory movements in the phenomena of tropisms. A second essential characteristic of animal activities is that of "differential sensibility" (a conception employed for the first time in a work on comparative psychology). Responses are modified by variations in the acting force. If Jennings had recognized these manifestations of differential sensibility, his theory of "trials and errors" would have been superfluous. The activities, which Jennings attributes to the result of trials and errors, are shown to be due to the superposition of differential sensibility upon tropisms. Again the manifestations of vital rhythms (an original chapter of the book) must be considered in the mechanism of animal activities. Certain periodic activities of animals are the result of chemical changes induced by regular variations in the environment. This purely biological phenomenon has no need of such psychic explanation as prevision of the future on the part of the animal.

It is important to distinguish between reactions which are the result of a combination of motive impulsions and those which respond to an association of sensations (sensation in the physiological sense). In the former case the movements are automatic and obey the laws of mechanics and physics. In the second instance the reactions do "not obey directly the force of the exterior environment, but rather special states of the system of coordination (the nervous system) provoked by the complexes of external excitants. Here we have an association of sensations, "psychism." Among the inferior animals (polypes, worms, mollusks) there is no evidence of any predominating psychic activity. Tropisms, differential sensibility, and their combination, are the determining characteristics. Psychism among these animals is "rudimentary."

Proceeding to the discussion of the reactions of the more highly organized animals (articulates, vertebrates), we are confronted with the phenomena of the "Acquisition of Habits" (Book IV.), phenomena which involve the association of sensations or psychism. The rôle of vision is fundamental in effecting this psychic revolution. The author combats the mechanistic interpretation which would make vision an example of tropism. In tropism a single reaction is possible, while in

vision there is forcibly a choice. Experimental researches on the acquisition of habits have given rise to two opposed attitudes of interpretation; the mechanistic, which sees in these phenomena only the result of a combination of tropisms; and, on the other hand, these manifestations are explained as results of association of sensations. The tendency to explain everything by tropisms is deplored. In such phenomena as "the return to the nest," "the recognition of objects," "the relations of insects and flowers," there is evidence of association of sensations. The confusion of tropism and associative memory may be partly explained by the fact that in associative phenomena one element is more predominant than others in exciting activity.

In the discussion of finality in animal psychology it is maintained that adaptation to an end is no reason for qualifying an act as psychic. Thus the search for nourishment may often be explained by tropisms and differential sensibility, acts purely mechanical. Again, what are generally denoted as reflex movements can not be termed psychic, since they are not of central origin. If the fact that an act is adapted to an end established its psychic character, all nature would be psychic.

A review of the classic conceptions of instinct shows little accord as to the significance of this term. The word has been used to cover phenomena as diverse as tropisms, differential sensibility, and associative memory. The word is simply a word, of little service in scientific investigation. The conservation of this term has led to the opposition of instinct and intelligence, which notions may be more profitably comprehended as two stages of the same process.

The book concludes with a sketch of the probable evolution of psychism. This development has been generally accomplished by "psychic revolutions." We encounter the first psychic revolution in the perfecting of the receptive organs (primarily the eye). The second great development appears with the vertebrates in the formation of a registering apparatus, the brain. Here for the first time it is correct to speak of intelligence. The author denies intelligence among the articulates, and finds there "only a favorable soil for the birth of intelligence." The third psychic revolution takes place with the advent of man.

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JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. August, 1909. *Les théories de l'attention* (pp. 119–139): N. VASCHIDE and R. MEUNIER. – An exposition of various theories of attention. From their consideration the authors conclude that (1) we are insufficiently informed with regard to the psychological mechanism of attention; (2) attention is intimately connected with an emotional state; (3) attention is a psychological phenomenon of central origin; (4) attention is an essentially dynamic function. *L'origine du droit et du devoir* (pp. 140–162): R. SALEILLES. – Right and

duty are two aspects of the same phenomenon of consciousness. The source of the conception of the right lies in the individual; conception is a constituent part of consciousness. It is based upon the double sentiment of individual personality and social duty. *Du temps où la Scolastique latine a connu la Physique d'Aristote* (pp. 163–178): P. DUHEM. – The influence of the "Physics" is first seen in scholastic writings of the first half of the twelfth century. At that time doctrines from the fourth book find expression in works of Thierry de Chartres, Gilbert de la Porrée, and Guillaume de Couches. *La détermination des concepts de matière, d'entendement et de raison dans la philosophie de Schopenhauer* (pp. 179–199): J. LOUIS. – A matter which is nothing without thought, but by which thought spreads over the world a dangerous veil of illusion; an understanding which is merely the objective correlative of matter or causality; reason, which, however, derives from intuition its entire significance and content—these are, according to Schopenhauer, some of the principal concepts of the theory of knowledge. *Analyses et comptes rendus:* E. Naville, *Les systèmes de philosophie ou les philosophies affirmatives.* H. Sturt, *Idola Theatri. A criticism of Oxford thought:* E. BARON. E. H. Schmitt, *Kritik der Philosophie vom Standpunkt der Intuitiven Erkenntnis:* P. CHARLES. N. Vaschide, *Psychologie de la main.* J. B. Pratt, *The Psychology of Religious Belief.* P. Gauthier, *Reflets d'histoire:* T. DE VISAN. G. del Vecchio, *Presupposti filosofici della nozione del Diritto:* C. BOUCAUD. K. Ollion, *La philosophie générale de John Locke:* E. BARON. K. Jungmann, *René Descartes, eine Einführung in seine Werke:* H. LÉARD. P. Tisserand, *L'Anthropologie de Maine de Biran:* LOUÏS-LÉDA. *Périodiques.*

Abbot, E. Stanley. *Forms of Insanity in Five Years' Admissions to, and Discharges from, the Hospitals for the Insane in Massachusetts. American Journal of Insanity.* Vol. LXVI. No. 1. July, 1909. Pp. 111–122.

Diefendorf, Allen Ross and Raymond Dodge. *The Experimental Study of the Ocular Reactions of the Insane from Photographic Records. Brain.* Vol. XXXI. Pt. CXXIII. 1908. Pp. 451–489. *American Journal of Insanity.* Vol. LXV. No. 4. April, 1909. Pp. 798–800.

Packard, Frederic H. *The Munich Psychiatric Clinic.* Reprint from State Board of Insanity. 1909. Boston: Wright & Potter Printing Co., State Printers. 1909. Pp. 5.

Rowland, Eleanor Harris. *The Right to Believe.* Boston and New York: Houghton Mifflin Co. The Riverside Press, Cambridge. 1909. Pp. xv + 202.

Wells, Federic Lyman. *Motor Retardation as a Manic-depressive Symptom. American Journal of Insanity.* Vol. LXVI. No. 1. July, 1909. Pp. 52.

Wells, Federic Lyman. *Sex Differences in the Tapping Test: An Interpretation. American Journal of Psychology.* Vol. XX. July, 1909. Pp. 353–363.

NOTES AND NEWS

At the opening of the New York College of Physicians and Surgeons Dr. Christian A. Herbert spoke on "Imagination and Idealism in Medical Science."

William James's most recent volume, "The Meaning of Truth," a sequel to "Pragmatism," is just published by Longmans, Green, and Company.

Professor Paolo Raffaele Troiano, of the University of Turin, died in that city on June 9. Professor Troiano was the author of "La filosofia morale e i suoi problemi fondamentali" and "Basi dell' umanesimo."

Moffat, Yard and Company announce the publication of a book by Sir Oliver Lodge, "The Survival of Man: A Study in Psychical Research."

Roberto Ardigo has agreed to undertake a work on the history of Italian philosophy.

G. N. Gilbertson (A.B. University of Minnesota, 1908, A.M. 1909) has been appointed instructor in psychology at the University of Colorado. Mr. Gilbertson will take half of the work of Professor Henmom, who is this year acting dean of the University.

The last book of Dr. Pfeiderer, "The Development of Christianity," is to be published shortly by Mr. Fisher Unwin. The book is a sequel to the volume by Dr. Pfeiderer on "Christian Origins," and comprises the subject-matter of a course of lectures delivered at the University of Berlin.

The third congress of the *Societa filosofica italiana* is to be held at Rome October 27–31 of the current year. The program is as follows: Inauguration of the congress, opening address of the president, by Professor Giacomo Barzellotti; papers and discussion on the topic, pure philosophy and the history of philosophy, October 28; philosophy and science, October 29; philosophy of morals and philosophy of religion, October 30; economics, sociology, pedagogy, and esthetics, October 31; continuation of discussion on philosophy and the history of philosophy. The next congress is to be held at Bologne in 1911.

The *Athenæum* for September 25 prints the following note: "Dr. Kalisher, of Berlin, has made some experiments which form curious reading on the sense of music possessed, or rather, which can be acquired, by dogs. He appears to have trained a dog to accept food only to the accompaniment of a particular note on the organ or harmonium, and to refuse it if a neighboring note differing from it by no more than a semitone is played; and these experiments have been confirmed by Dr. Seljonoï, of St. Petersburg, who declares that if persisted in, the particular note associated by the dog with his meal will produce salivation to the exclusion of all other sounds, and that the memory of it will endure for as long a period as two months."